| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/715,521 | SATO ET AL. | |
| | Examiner | Art Unit | |
| | FARHAN M. SYED | 2165 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *13 May 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,2,5-7 and 9-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,5-7 and 9-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *[Attached herein]* .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

**DETAILED ACTION**

1. Claims 1-2, 5-7, and 9-11 are pending. Claims 1, 5, 7, 9, and 10 are amended and claim 11 is newly added.

***Response to Arguments***

2. Applicant's arguments filed 13 May 2008 have been fully considered but they are not persuasive.

(1) Enomoto and Yee fail to teach or suggest "wherein when no failure occurs on the first transmission line and no failure occurs on the second transmission line, the relaying means of the transmission terminals do not relay the information to the first transmission line or the second transmission line and each of the transmission terminals receives the information from the sender via both the first transmission line and the second transmission line," as recited in claim 1, and as similarly recited in claims 7 and 10.

The Examiner disagrees and has addressed this argument in the rejection below.

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(2) Yee fails to teach or suggest "a first transmission line and a second transmission line which connect to a plurality of vehicles constituting a railway train."

The Examiner disagrees and has addressed the arguments in the rejection below.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 5-7, and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enomoto et al (previously presented, U.S. Patent Pub. 2003/007681 A1) in view of a non-Patent Literature titled "Efficient Data Allocation over Multiple Channels as Broadcast Servers" by Yee et al (previously presented, IEEE Transactions on Computers, Vol 51, No. 10, October 2002, pages 1231-1236 and known hereinafter as Yee).

As per claim 1, Enomoto teaches an information transmission system comprising: a first transmission line (i.e. R11 and R22 are two transmission lines)(Figure 1); a second transmission line (i.e. R11 and R22 are two transmission lines)(Figure 1); and a plurality of transmission terminals (Client C1-C4 are transmission terminals)(Figure 1) that are connected to both the first transmission line and the second transmission line (i.e. In Figure 1 clearly illustrates that two transmission lines are R11 and R12 and a plurality of transmission terminals are client groups C1-C4.)(Figure 1), wherein each of said transmission terminals comprises a relaying means (i.e. *"The first client group C1 is a set of one or more clients and has a function for carrying out transmission/reception of frames between the first congestion control node A1 and the first client group C1. Each of the second through the fourth client groups C2 to C4 is similar in structure and operation to*

*the first client group C1. That is, the second client group C2 has a function for carrying out transmission/reception of frames between the second congestion control node A2 and the second client group C2."* The preceding text clearly indicates that transmission terminals, which are client groups C1-C4 receives information from a sender, which is illustrated based on the relationship of C1 and C2, where C1 is the sender of information and C2 is the receiver of information. In this illustration, information is contained in frames.)(Page 8, paragraphs 106-107), wherein each of said transmission terminals (Client C1-C4 are transmission terminals)(Figure 1) receives information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) from a sender (i.e. sender for Client C1 could be Client C2 *or* C4)(Figure 1) (i.e. R11 and R22 are two transmission lines)(Figure 1) via one or both of the first transmission line and the second transmission line (i.e. *"The first client group C1 is a set of one or more clients and has a function for carrying out transmission/reception of frames between the first congestion control node A1 and the first client group C1. Each of the second through the fourth client groups C2 to C4 is similar in structure and operation to the first client group C1. That is, the second client group C2 has a function for carrying out transmission/reception of frames between the second congestion control node A2 and the second client group C2."* The preceding text clearly indicates that transmission terminals, which are client groups C1-C4 receives information from a sender, which is illustrated based on the relationship of C1 and C2, where C1 is the sender of information and C2 is the receiver of information. In this illustration, information is contained in frames.)(Page 8, paragraphs 106-107), wherein each of the transmission terminals (i.e. congestion control system/node)(paragraph [0027]) determines whether a failure (i.e. "…congestion control nodes further comprises a failure detection arrangement…")(paragraph [0032]) has occurred on either the first transmission line (i.e. R11)(Figures 1 and 8) or the second transmission line (i.e. R22)(Figures 1 and 8) by checking (see Figures 7-8) whether the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) is being transferred on the first transmission line (i.e. R11)(Figures 1 and 8) and is

not being transferred on the second transmission line (i.e. R22)(Figures 1 and 8), wherein a determination that the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) is being transferred on the first transmission line (i.e. R11)(Figures 1 and 8) and is not being transferred on the second transmission line (i.e. R22)(Figures 1 and 8) indicates a failure (i.e. "...congestion control nodes further comprises a failure detection arrangement...")(paragraphs [0032], [0034]) has occurred on the second transmission line (i.e. R22)(Figures 1 and 8), wherein when no failure occurs on the first transmission line (i.e. R11)(Figures 1 and 8) and no failure occurs on the second transmission line (i.e. R22)(Figures 1 and 8), the relaying means of the transmission terminals do not relay the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) to the first transmission line (i.e. R11)(Figures 1 and 8) or the second transmission line (i.e. R22)(Figures 1 and 8), and each of the transmission terminals receives the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) from the sender via both the first transmission line and the second transmission line (i.e. *"The ring-shaped network R1 comprises a first one-way ring R11 turning around or flowing in a clockwise direction and a second one-way ring R12 turning around or flowing in a counterclockwise direction in the opposite direction to the first one-way ring R11. The first and the second one-way rings R11 and R12 are collectively called the ring-shaped network R1. The ring-shaped network R1 has a function for transferring frames sent from one of the first through the fourth congestion control nodes A1 to A4 to a different one of the first through the fourth congestion control nodes A1 to A4."* The preceding text clearly indicates that a ring shape network R1 and R2 are two transmission lines where information is sent, where R1 sends information in one direction and R2 sends information in another direction.)(Page 8, paragraph 104), and wherein when a failure (i.e. "...congestion control nodes further comprises a failure detection arrangement...")(paragraph [0032]) occurs on the first transmission line (i.e. R11)(Figures 1 and 8), such that a first transmission

terminal determines that the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) is being transferred on the first transmission line (i.e. R11)(Figures 1 and 8) and is not being transferred on the second transmission line (i.e. R22)(Figures 1 and 8), the first transmission terminal receives the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) from the sender via the first transmission line (i.e. R11)(Figures 1 and 8), and the relaying means transfers the received information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) to the second transmission line (i.e. R22)(Figures 1 and 8) such that the information is present on both the first transmission line and the second transmission line at the first terminal (see Figure 10).

Enomoto does not explicitly teach a system that all transmissions are conducted over both of said two transmission lines.

Yee teaches a system that all transmissions (i.e. broadcasts)(see Figure 1; Page 1231, section 1) are conducted over both (i.e. "*The use of multiple channels allows better fault tolerance, configurability, and scalability. For examiner, servers with multiple channel ability can assume the wokload of other crashed servers in the same cell or broadcast over another channel in the same cell.*" The preceding text clearly indicates that a benefit exists when broadcasting is performed on multiple channels. Furthermore, the prior art teaches that data allocation takes place over multiple broadcast channels and therefore the Examiner reasonably presumes that this transmission is done on at least both channels)(Page 1231, section 1; pages 1231-1232, sections 3 and 4) of said two transmission lines (i.e. multichannel or multiple channels)(Page 1231, section 1) (i.e. *"Furthermore, there are some definite advantages that accrue from multichannel broadcast. The use of multiple channels allows better fault tolerance, configurability, and scalability. For examiner, servers with multiple channel ability can assume the wokload of other crashed servers in the same cell or broadcast over another channel in the same cell." "Example. Consider the problem of allocating the set of N=6 items from the example in Section 3 to*

*K=3 channels. Using GREEDY algorithm, the first split occurs between item 2 and 3 and the second occurs between items 1 and 2. These two splits reduce the average expected delay from 3 ticks to 0.95 ticks. See Fig. 2"* The preceding text clearly indicates that multiple channels are examples of multiple transmission lines, where the transmission of data is used over multiple channels (i.e. multiple transmission lines).)(Page 1231, section 1; page 1233, section 4.2).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Enomoto with the teachings of Yee to include a system that all transmissions are conducted over both of said two transmission lines with the motivation to allocate data to these channels in a way that reduces the average expected delay of a request (Yee, section 1).

As per claim 2 Enomoto teaches an information transmission system wherein said information transmission system is equipped with a means which preferentially relays information to a relaying means of a transmission terminal close to said sender (i.e. *"The ring-shaped network R1 has a function for transferring frames sent from one of the first through the fourth congestion control nodes A1 to A4 to a different one of the first through the fourth congestion control nodes A1 to A4." "The routing table A12 has a function for memorizing a cost up to each destination congestion control node and an ID of a sending one-way ring. The ID of the sending one-way ring indicates either the first one-way ring R11 or the second one-way ring R12. Information of the routing table A12 is used by the transfer direction determination part A11, and the first and the second congestion control parts A13 and A14. At any rate, the routing table A12 designates a transfer path for destination."* The preceding text clearly indicates that a routing table determines the preferentiality of relay information and the congestion control nodes A1-A4 are the relaying means of a transmission terminal. In addition, paragraph 125 illustrates that the preferentially relay information is sent close to the sender,

where C1 is the sender and C4 or C2 are the recipient of the relay information.)(Page 8, paragraph 104; page 9, paragraphs 124-125).

As per claim 5, Enomoto teaches an information transmission system according to claim 1, wherein each of said transmission terminals is equipped with a means o send information from said terminal to the other transmission terminal, wherein each of said transmission terminals is equipped with means to send information from said terminal to the other transmission terminal over one of said two transmission lines if determined to be necessary (i.e. *"The two-way link L100 is a two-way link for linking the first client group C1 with the first congestion control node A1 and for linking the first congestion control node A1 with the first client group C1. The first one-way link L101 is a one-way link for linking the second congestion control node A2 with the first congestion control node A1 and belongs to the first one-way ring R11. The third one-way link L103 is a one-way link for linking the fourth congestion control node A4 with the first congestion control node A1 and belongs to the second one-way ring R12."* The preceding text clearly indicates that the transmission terminal, which is C1 is equipped with the means to use two transmission lines, which are R11 and R11, respectively. Both lines are used to send information from C1 to the other transmission terminal, which may be C2 or C4.)(Page 9, paragraphs 117-120).

As per claim 6 Enomoto teaches an information transmission system wherein said information transmission system is equipped with a means which preferentially relays information to a relaying means of a transmission terminal close to said sender (i.e. *"The ring-shaped network R1 has a function for transferring frames sent from one of the first through the fourth congestion control nodes A1 to A4 to a different one of the first through the fourth congestion control nodes A1 to A4." "The routing table A12 has a function for memorizing a cost up to each destination congestion control node and an ID of a sending one-way ring. The ID of the sending one-way*

*ring indicates either the first one-way ring R11 or the second one-way ring R12. Information of the routing table A12 is used by the transfer direction determination part A11, and the first and the second congestion control parts A13 and A14. At any rate, the routing table A12 designates a transfer path for destination."* The preceding text clearly indicates that a routing table determines the preferentiality of relay information and the congestion control nodes A1-A4 are the relaying means of a transmission terminal. In addition, paragraph 125 illustrates that the preferentially relay information is sent close to the sender, where C1 is the sender and C4 or C2 are the recipient of the relay information.)(Page 8, paragraph 104; page 9, paragraphs 124-125).

As per claim 7, Enomoto teaches an information transmission system for railway vehicles comprising: a first transmission line (i.e. R11 and R22 are two transmission lines)(Figure 1); a second transmission line (i.e. R11 and R22 are two transmission lines)(Figure 1); and a plurality of transmission terminals (Client C1-C4 are transmission terminals)(Figure 1) that are connected to both the first transmission line and the second transmission line (i.e. In Figure 1 clearly illustrates that two transmission lines are R11 and R12 and a plurality of transmission terminals are client groups C1-C4.)(Figure 1), wherein each of said transmission terminals comprises a relaying means (i.e. *"The first client group C1 is a set of one or more clients and has a function for carrying out transmission/reception of frames between the first congestion control node A1 and the first client group C1. Each of the second through the fourth client groups C2 to C4 is similar in structure and operation to the first client group C1. That is, the second client group C2 has a function for carrying out transmission/reception of frames between the second congestion control node A2 and the second client group C2."* The preceding text clearly indicates that transmission terminals, which are client groups C1-C4 receives information from a sender, which is illustrated based on the relationship of C1 and C2, where C1 is the sender of information and C2 is the receiver of information. In this illustration, information is contained in frames.)(Page 8, paragraphs 106-107), wherein each of said

transmission terminals (Client C1-C4 are transmission terminals)(Figure 1) receives information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) from a sender (i.e. sender for Client C1 could be Client C2 or C4)(Figure 1) (i.e. R11 and R22 are two transmission lines)(Figure 1) via one or both of the first transmission line and the second transmission line (i.e. *"The first client group C1 is a set of one or more clients and has a function for carrying out transmission/reception of frames between the first congestion control node A1 and the first client group C1. Each of the second through the fourth client groups C2 to C4 is similar in structure and operation to the first client group C1. That is, the second client group C2 has a function for carrying out transmission/reception of frames between the second congestion control node A2 and the second client group C2."* The preceding text clearly indicates that transmission terminals, which are client groups C1-C4 receives information from a sender, which is illustrated based on the relationship of C1 and C2, where C1 is the sender of information and C2 is the receiver of information. In this illustration, information is contained in frames.)(Page 8, paragraphs 106-107), wherein each of the transmission terminals (i.e. congestion control system/node)(paragraph [0027]) determines whether a failure (i.e. "...congestion control nodes further comprises a failure detection arrangement...")(paragraph [0032]) has occurred on either the first transmission line (i.e. R11)(Figures 1 and 8) or the second transmission line (i.e. R22)(Figures 1 and 8) by checking (see Figures 7-8) whether the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) is being transferred on the first transmission line (i.e. R11)(Figures 1 and 8) and is not being transferred on the second transmission line (i.e. R22)(Figures 1 and 8), wherein a determination that the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) is being transferred on the first transmission line (i.e. R11)(Figures 1 and 8) and is not being transferred on the second transmission line (i.e. R22)(Figures 1 and 8) indicates a failure (i.e. "...congestion control nodes further comprises a failure detection arrangement...")(paragraphs [0032], [0034]) has occurred on the

second transmission line (i.e. R22)(Figures 1 and 8), wherein when no failure occurs on the first transmission line (i.e. R11)(Figures 1 and 8) and no failure occurs on the second transmission line (i.e. R22)(Figures 1 and 8), the relaying means of the transmission terminals do not relay the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) to the first transmission line (i.e. R11)(Figures 1 and 8) or the second transmission line (i.e. R22)(Figures 1 and 8), and each of the transmission terminals receives the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) from the sender via both the first transmission line and the second transmission line (i.e. *"The ring-shaped network R1 comprises a first one-way ring R11 turning around or flowing in a clockwise direction and a second one-way ring R12 turning around or flowing in a counterclockwise direction in the opposite direction to the first one-way ring R11. The first and the second one-way rings R11 and R12 are collectively called the ring-shaped network R1. The ring-shaped network R1 has a function for transferring frames sent from one of the first through the fourth congestion control nodes A1 to A4 to a different one of the first through the fourth congestion control nodes A1 to A4."* The preceding text clearly indicates that a ring shape network R1 and R2 are two transmission lines where information is sent, where R1 sends information in one direction and R2 sends information in another direction.)(Page 8, paragraph 104), and wherein when a failure (i.e. "...congestion control nodes further comprises a failure detection arrangement...")(paragraph [0032]) occurs on the first transmission line (i.e. R11)(Figures 1 and 8), such that a first transmission terminal determines that the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) is being transferred on the first transmission line (i.e. R11)(Figures 1 and 8) and is not being transferred on the second transmission line (i.e. R22)(Figures 1 and 8), the first transmission terminal receives the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) from the sender

via the first transmission line (i.e. R11)(Figures 1 and 8), and the relaying means transfers the received information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) to the second transmission line (i.e. R22)(Figures 1 and 8) such that the information is present on both the first transmission line and the second transmission line at the first terminal (see Figure 10).

Enomoto does not explicitly teach a system that all transmissions are conducted over both of said two transmission lines.

Yee teaches a system that all transmissions (i.e. broadcasts)(see Figure 1; Page 1231, section 1) are conducted over both (i.e. "*The use of multiple channels allows better fault tolerance, configurability, and scalability. For examiner, servers with multiple channel ability can assume the wokload of other crashed servers in the same cell or broadcast over another channel in the same cell.*" The preceding text clearly indicates that a benefit exists when broadcasting is performed on multiple channels. Furthermore, the prior art teaches that data allocation takes place over multiple broadcast channels and therefore the Examiner reasonably presumes that this transmission is done on at least both channels)(Page 1231, section 1; pages 1231-1232, sections 3 and 4) of said two transmission lines (i.e. multichannel or multiple channels)(Page 1231, section 1) (i.e. *"Furthermore, there are some definite advantages that accrue from multichannel broadcast. The use of multiple channels allows better fault tolerance, configurability, and scalability. For examiner, servers with multiple channel ability can assume the wokload of other crashed servers in the same cell or broadcast over another channel in the same cell." "Example. Consider the problem of allocating the set of N=6 items from the example in Section 3 to K=3 channels. Using GREEDY algorithm, the first split occurs between item 2 and 3 and the second occurs between items 1 and 2. These two splits reduce the average expected delay from 3 ticks to 0.95 ticks. See Fig. 2"* The preceding text clearly indicates that multiple channels are examples of multiple

transmission lines, where the transmission of data is used over multiple channels (i.e. multiple transmission lines).)(Page 1231, section 1; page 1233, section 4.2).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Enomoto with the teachings of Yee to include a system that all transmissions are conducted over both of said two transmission lines with the motivation to allocate data to these channels in a way that reduces the average expected delay of a request (Yee, section 1).

As per claim 9, Enomoto teaches an information transmission system wherein each of said railway vehicles has two of said transmission terminals each of which has a means to respectively send information over said first transmission line and said second transmission line when said transmission terminal sends information from the vehicle having the transmission terminal to the other vehicle (i.e. *"The two-way link L100 is a two-way link for linking the first client group C1 with the first congestion control node A1 and for linking the first congestion control node A1 with the first client group C1. The first one-way link L101 is a one-way link for linking the second congestion control node A2 with the first congestion control node A1 and belongs to the first one-way ring R11. The third one-way link L103 is a one-way link for linking the fourth congestion control node A4 with the first congestion control node A1 and belongs to the second one-way ring R12."* The preceding text clearly indicates that the transmission terminal, which is C1 is equipped with the means to use two transmission lines, which are R11 and R11, respectively. The vehicle in this illustration would be the congestion control node, A1-A4. Both lines are used to send information from C1 to the other vehicle, which may be A2 or A4.)(Page 9, paragraphs 117-120).

As per claim 10, Enomoto teaches an information transmission method of an information transmission system comprising: a first transmission line (i.e. R11 and R22 are two transmission lines)(Figure 1); a second transmission line (i.e. R11 and R22 are two transmission lines)(Figure 1); and a plurality of transmission terminals (Client C1-C4 are transmission terminals)(Figure 1) that are connected to both the first transmission line and the second transmission line (i.e. In Figure 1 clearly illustrates that two transmission lines are R11 and R12 and a plurality of transmission terminals are client groups C1-C4.)(Figure 1), wherein each of said transmission terminals comprises a relaying means (i.e. *"The first client group C1 is a set of one or more clients and has a function for carrying out transmission/reception of frames between the first congestion control node A1 and the first client group C1. Each of the second through the fourth client groups C2 to C4 is similar in structure and operation to the first client group C1. That is, the second client group C2 has a function for carrying out transmission/reception of frames between the second congestion control node A2 and the second client group C2."* The preceding text clearly indicates that transmission terminals, which are client groups C1-C4 receives information from a sender, which is illustrated based on the relationship of C1 and C2, where C1 is the sender of information and C2 is the receiver of information. In this illustration, information is contained in frames.)(Page 8, paragraphs 106-107), wherein each of said transmission terminals (Client C1-C4 are transmission terminals)(Figure 1) receives information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) from a sender (i.e. sender for Client C1 could be Client C2 or C4)(Figure 1) (i.e. R11 and R22 are two transmission lines)(Figure 1) via one or both of the first transmission line and the second transmission line (i.e. *"The first client group C1 is a set of one or more clients and has a function for carrying out transmission/reception of frames between the first congestion control node A1 and the first client group C1. Each of the second through the fourth client groups C2 to C4 is similar in structure and operation to the first client group C1. That is, the second client group C2 has a function for carrying out*

*transmission/reception of frames between the second congestion control node A2 and the second client group C2.*" The preceding text clearly indicates that transmission terminals, which are client groups C1-C4 receives information from a sender, which is illustrated based on the relationship of C1 and C2, where C1 is the sender of information and C2 is the receiver of information. In this illustration, information is contained in frames.)(Page 8, paragraphs 106-107), wherein each of the transmission terminals (i.e. congestion control system/node)(paragraph [0027]) determines whether a failure (i.e. "…congestion control nodes further comprises a failure detection arrangement…")(paragraph [0032]) has occurred on either the first transmission line (i.e. R11)(Figures 1 and 8) or the second transmission line (i.e. R22)(Figures 1 and 8) by checking (see Figures 7-8) whether the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) is being transferred on the first transmission line (i.e. R11)(Figures 1 and 8) and is not being transferred on the second transmission line (i.e. R22)(Figures 1 and 8), wherein a determination that the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) is being transferred on the first transmission line (i.e. R11)(Figures 1 and 8) and is not being transferred on the second transmission line (i.e. R22)(Figures 1 and 8) indicates a failure (i.e. "…congestion control nodes further comprises a failure detection arrangement…")(paragraphs [0032], [0034]) has occurred on the second transmission line (i.e. R22)(Figures 1 and 8), wherein when no failure occurs on the first transmission line (i.e. R11)(Figures 1 and 8) and no failure occurs on the second transmission line (i.e. R22)(Figures 1 and 8), the relaying means of the transmission terminals do not relay the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) to the first transmission line (i.e. R11)(Figures 1 and 8) or the second transmission line (i.e. R22)(Figures 1 and 8), and each of the transmission terminals receives the information (i.e. transmission/reception of

frames)(Page 8, paragraphs 106-107) from the sender via both the first transmission line and the second transmission line (i.e. *"The ring-shaped network R1 comprises a first one-way ring R11 turning around or flowing in a clockwise direction and a second one-way ring R12 turning around or flowing in a counterclockwise direction in the opposite direction to the first one-way ring R11. The first and the second one-way rings R11 and R12 are collectively called the ring-shaped network R1. The ring-shaped network R1 has a function for transferring frames sent from one of the first through the fourth congestion control nodes A1 to A4 to a different one of the first through the fourth congestion control nodes A1 to A4."* The preceding text clearly indicates that a ring shape network R1 and R2 are two transmission lines where information is sent, where R1 sends information in one direction and R2 sends information in another direction.)(Page 8, paragraph 104), and wherein when a failure (i.e. "…congestion control nodes further comprises a failure detection arrangement…")(paragraph [0032]) occurs on the first transmission line (i.e. R11)(Figures 1 and 8), such that a first transmission terminal determines that the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) is being transferred on the first transmission line (i.e. R11)(Figures 1 and 8) and is not being transferred on the second transmission line (i.e. R22)(Figures 1 and 8), the first transmission terminal receives the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) from the sender via the first transmission line (i.e. R11)(Figures 1 and 8), and the relaying means transfers the received information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) to the second transmission line (i.e. R22)(Figures 1 and 8) such that the information is present on both the first transmission line and the second transmission line at the first terminal (see Figure 10).

Enomoto does not explicitly teach a system that all transmissions are conducted over both of said two transmission lines.

Yee teaches a system that all transmissions (i.e. broadcasts)(see Figure 1; Page 1231, section 1) are conducted over both (i.e. "*The use of multiple channels allows better fault tolerance, configurability, and scalability. For examiner, servers with multiple channel ability can assume the wokload of other crashed servers in the same cell or broadcast over another channel in the same cell.*" The preceding text clearly indicates that a benefit exists when broadcasting is performed on multiple channels. Furthermore, the prior art teaches that data allocation takes place over multiple broadcast channels and therefore the Examiner reasonably presumes that this transmission is done on at least both channels)(Page 1231, section 1; pages 1231-1232, sections 3 and 4) of said two transmission lines (i.e. multichannel or multiple channels)(Page 1231, section 1) (i.e. *"Furthermore, there are some definite advantages that accrue from multichannel broadcast. The use of multiple channels allows better fault tolerance, configurability, and scalability. For examiner, servers with multiple channel ability can assume the wokload of other crashed servers in the same cell or broadcast over another channel in the same cell." "Example. Consider the problem of allocating the set of N=6 items from the example in Section 3 to K=3 channels. Using GREEDY algorithm, the first split occurs between item 2 and 3 and the second occurs between items 1 and 2. These two splits reduce the average expected delay from 3 ticks to 0.95 ticks. See Fig. 2"* The preceding text clearly indicates that multiple channels are examples of multiple transmission lines, where the transmission of data is used over multiple channels (i.e. multiple transmission lines).)(Page 1231, section 1; page 1233, section 4.2).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Enomoto with the teachings of Yee to include a system that all transmissions are conducted over both of said two transmission lines with the motivation to allocate data to these channels in a way that reduces the average expected delay of a request (Yee, section 1).

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Enomoto et al (previously presented, U.S. Patent Pub. 2003/007681 A1) in view of a non-Patent Literature titled "Efficient Data Allocation over Multiple Channels as Broadcast Servers" by Yee et al (previously presented, IEEE Transactions on Computers, Vol 51, No. 10, October 2002, pages 1231-1236 and known hereinafter as Yee) and in further view of Kage (U.S. 4,301,539).

As per claim 11, Enomoto teaches a transmission terminal (i.e. congestion control system)(see paragraphs [0032, 0034]) that receives information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) from one or both of a first transmission line and a second transmission line (i.e. R11 and R22 are two transmission lines)(Figure 1), the transmission terminal comprising: a device controller comprising a device control block (i.e. congestion control part)(Figure 11); and a communication controller (i.e. congestion controlling communications on a network)(paragraph [0001]) comprising a storage area, wherein the storage area comprises a status table (i.e. routing table)(Figure 11), wherein when the transmission terminal (Client C1-C4 are transmission terminals)(Figure 1) receives information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) from the first transmission line (i.e. R11 and R22 are two transmission lines)(Figure 1), the received counter is incremented, wherein when no information is received by the transmission terminal (Client C1-C4 are transmission terminals)(Figure 1) from the first transmission line (i.e. R11 and R22 are two transmission lines)(Figure 1), the received counter is not incremented, and the transmission terminal determines whether the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) is being transmitted from the second transmission line (i.e. R11 and R22

are two transmission lines)(Figure 1), wherein when the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) is being transmitted from the second transmission line (i.e. R11 and R22 are two transmission lines)(Figure 1), the transmission terminal (Client C1-C4 are transmission terminals)(Figure 1) checks the repetition required flag to determine whether data repetition is required, wherein when data repetition is required, the transmission terminal (Client C1-C4 are transmission terminals)(Figure 1) relays the information to the first transmission line and sends the information (i.e. transmission/reception of frames)(Page 8, paragraphs 106-107) to the device control block, and wherein when data repetition is not required, the transmission terminal (Client C1-C4 are transmission terminals)(Figure 1) discards the information (see paragraphs [0032], [0034]).

Enomoto does not explicitly teach a system that all transmissions are conducted over both of said two transmission lines.

Yee teaches a system that all transmissions (i.e. broadcasts)(see Figure 1; Page 1231, section 1) are conducted over both (i.e. "*The use of multiple channels allows better fault tolerance, configurability, and scalability. For examiner, servers with multiple channel ability can assume the wokload of other crashed servers in the same cell or broadcast over another channel in the same cell.*" The preceding text clearly indicates that a benefit exists when broadcasting is performed on multiple channels. Furthermore, the prior art teaches that data allocation takes place over multiple broadcast channels and therefore the Examiner reasonably presumes that this transmission is done on at least both channels)(Page 1231, section 1; pages 1231-1232, sections 3 and 4) of said two transmission lines (i.e. multichannel or multiple channels)(Page 1231, section 1) (i.e. *"Furthermore, there are some definite advantages that accrue from multichannel broadcast. The use of multiple channels allows better fault tolerance, configurability, and scalability. For examiner, servers with multiple channel ability can assume the wokload of other crashed servers in the same cell or broadcast over another channel in the same*

*cell." "Example. Consider the problem of allocating the set of N=6 items from the example in Section 3 to K=3 channels. Using GREEDY algorithm, the first split occurs between item 2 and 3 and the second occurs between items 1 and 2. These two splits reduce the average expected delay from 3 ticks to 0.95 ticks. See Fig. 2"* The preceding text clearly indicates that multiple channels are examples of multiple transmission lines, where the transmission of data is used over multiple channels (i.e. multiple transmission lines).)(Page 1231, section 1; page 1233, section 4.2).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Enomoto with the teachings of Yee to include a system that all transmissions are conducted over both of said two transmission lines with the motivation to allocate data to these channels in a way that reduces the average expected delay of a request (Yee, section 1).

Enomoto and Yee do not explicitly teach a wherein the status table comprises: a received counter; and a repetition required flag.

Kage teaches a status table comprising: a received counter (i.e. counter)(column 4, lines 35-40) and a repetition required flag (i.e. repetition period)(column 4, lines 24-35).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Enomoto with the teachings of Yee and with the further teachings of Kage to include the status table comprises: a received counter; and a repetition required flag with the motivation to allocate data to these channels in a way that reduces the average expected delay of a request (Yee, section 1).

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farhan M. Syed whose telephone number is 571-272-7191. The examiner can normally be reached on 8:30AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christian Chace can be reached on 571-272-4190. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/F. M. S./
Examiner, Art Unit 2165

/Christian P. Chace/

Supervisory Patent Examiner, Art Unit 2165